

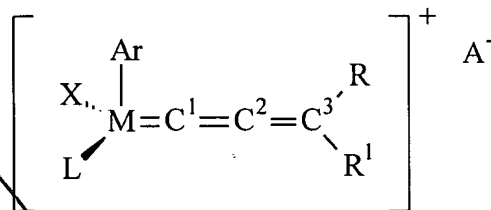
R and R¹ are independently selected from the group consisting of hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₂-C₂₀ alkoxy carbonyl, aryl, C₁-C₂₀ carboxylate, C₁-C₂₀ alkoxy, C₂-C₂₀ alkenyloxy, C₂-C₂₀ alkynyloxy, or aryloxy, each R and R¹ optionally being substituted with C₁-C₅ alkyl, halogen, C₁-C₆ alkoxy, or with a phenyl group substituted with halogen, C₁-C₅ alkyl or C₁-C₅ alkoxy;

X and X¹ are independently selected from the group consisting of anionic ligands;

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L and L¹ are selected from the group consisting of nucleophilic carbenes, phosphine, sulfonated phosphine, phosphite, phosphinite, phosphonite, ether, amine, amide, sulfoxide, carbonyl, nitrosyl, pyridine and thioether, wherein at least one of L or L¹ is a nucleophilic carbene. —

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23. (Amended) A method of performing ring closing metathesis, said method comprising contacting a diterminal diene with a catalytic complex under conditions appropriate, and for a time sufficient to produce a cyclic alkene, wherein the catalytic complex has the formula:



wherein

B2 C¹, C² and C³ are sp²-hybridized carbons, wherein either or both of C¹ and C² are optionally absent;

M is selected from the group consisting of Os and Ru;

R and R¹ are independently selected from the group consisting of hydrogen, C₁-C₂₀ alkyl, C₂-C₂₀ alkenyl, C₂-C₂₀ alkynyl, C₂-C₂₀ alkoxy carbonyl, aryl, C₁-C₂₀ carboxylate, C₁-C₂₀ alkoxy, C₂-C₂₀ alkenyloxy, C₂-C₂₀ alkynyloxy, or aryloxy, each R and R¹ optionally being substituted with C₁-C₅ alkyl, halogen, C₁-C₆ alkoxy, or with a phenyl group substituted with halogen, C₁-C₅ alkyl or C₁-C₅ alkoxy;

X is an anionic ligand; and

L is a nucleophilic carbene; and

Ar is an aryl substituent, bonded to M by an η⁶ bond. —

Please add claims 27-38.

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-- 27. (New) The catalytic complex of claim 9, wherein at least one of the anionic ligands X and X' are independently selected from the group consisting of halide, carboxylate, alkoxy, aryloxy, and alkyl sulfonate.--

-- 28. (New) The catalytic complex of claim 27, wherein at least one of the anionic ligands is chloride.--

-- 29. (New) The catalytic complex of claim 9, wherein the nucleophilic carbene ligand comprises a carbene carbon further bonded to two heteroatoms having electronegativity greater than that of carbon, wherein the heteroatoms are independently selected from the group consisting of nitrogen, oxygen, and sulfur.--

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-- 30. (New) The catalytic complex of claim 29, wherein the nucleophilic carbene ligand comprises a saturated or unsaturated 1,3-diheteroaromatic cyclic compound.--

-- 31. (New) The catalytic complex of claim 9, wherein the complex is linked to a solid support by means of a link between at least one of said anionic ligands and said solid support.--

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-- 32. (New) The catalytic complex of claim 9, wherein the complex is linked to a solid support by means of a link between at least one of said nucleophilic carbenes and said solid support.--

-- 33. (New) The catalytic complex of claim 14, wherein the anionic ligand X is selected from the group consisting of halide, carboxylate, alkoxy, aryloxy, and alkyl sulfonate.--

-- 34. (New) The catalytic complex of claim 33, wherein the anionic ligand is chloride.--

-- 35. (New) The catalytic complex of claim 14, wherein the nucleophilic carbene ligand comprises a carbene carbon further bonded to two heteroatoms having electronegativity greater than that of carbon, wherein the heteroatoms are independently selected from the group consisting of nitrogen, oxygen, and sulfur.--

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-- 36. (New) The catalytic complex of claim 35, wherein the nucleophilic carbene ligand comprises a saturated or unsaturated 1,3-diheteroaromatic cyclic compound.--